# Questionnaires conference

## GOVERNMENT BY ALGORITHMS: A COMPARATIVE ANALYSIS OF HOW NEW TECHNOLOGIES CHANGED AND INFLUENCED THE ADMINISTRATION AND JUDICIARY.

### 1.Introduction

Technologies such as AI, Big Data analytics, and the Internet of Things (IoT) are changing the world as we know it. Although not an entirely new phenomenon, the characteristics of these new technologies - such as Big Data analytics' ability to capture and analyse massive quantities of real-time data - are revolutionary. The rise of these new technologies therefore has triggered a paradigm-shift within governments across the world. The Weberian ''paperwork'' driven government, in which public bodies mainly relied upon paper-data or administrative data to make and support administrative decisions, has been replaced by data-driven government. This paradigm-shift has also changed administrative decision-making processes: governments across the globe can collect, process, and analyse large amounts of data and translate them into valuable information about its citizenry,[1] which in turn can be used to improve policymaking and administrative decision-making processes.[2] In addition, this data can be used by public bodies as a tool to provide public services to citizens (e.g. granting permits, welfare benefits) and data can serve as a basis to create predictive algorithms that can guide the efficient allocation of public services, for example where and how to monitor, and generate predictive algorithms that create profiles which can be used to detect and prevent fraud. [3]

The increased use of administrative decision-making based on profiling[4] or algorithmic decisions-making procedures[5] by public bodies offers both promises and perils. On the one hand, algorithmically-determined decision-making may herald enormous positive potential for governments around the world. New technologies such as AI enable public bodies to take

[1] Member States of the European Union need to comply with the General Data Protection Regulation. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, repealing Directive 95/46/EC.

[2] The Netherlands Scientific Council for Government Policy, *Exploring the Boundaries of Big Data,* (Amsterdam University Press 2016), Centre national de la recherche scientifique, *Le travail de la science et la numérique. Une analyse systématique de la loi numérique,* (Direction de l'information scientifique et technique 2017), Katrin Nyman Metcalf, 'e-Governance: A New Reality For Legislative Drafting?', (2017) 6 International Journal of Legislative Drafting and Law Reform, Peter Blume, 'The Public Sector and the Forthcoming EU Data Protection Regulation' (2015) 1 European Data Protection Law Review p. 258-264.

[3] Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 Georgetown Law Journal 1147, Janine S. Hiller and Jordan M. Blanke, 'Smart Cities, Big Data, and the Resilience of Privacy' (2017) 68 Hastings Law Journal 30, 311, Sarah Giest, 'Big Data for Policymaking: fad or fast-track? (2017) 50 Policy Sciences.

[4] Administrative decisions based on predictive profiling refers to the broad use of big data analytics and to collect and process data that the public body indirectly uses to decide upon an administrative decision, such as algorithms trained in finding patterns in large data sets that is used to identify high risk-cases of tax- and social-welfare fraud tax- and social-welfare fraud

[5] Algorithmic decision-making procedures or algorithmically-determined decision-making refers to the use of technologies such as AI, big data analytics and machine learning, to grant administrative decisions (such as granting building/environment permits, social welfare benefits).

administrative decisions, such as building permits, social welfare benefits, more rapidly. This not only renders administrative decision-making procedures more efficient, but also improves quality standards by grounding these procedures in a data- and evidence-based approach.[6] Additionally, algorithmically determined decision-making can enhance the fairness of administrative decisions, since this method guards civil servants against biases that may implicitly or explicitly affect human decision-making processes. On the other hand, however, algorithmically determined decision can also produce great risks. First, they pose special risks related to the opaqueness of administrative decision-making processes on two levels: the creation of a profile and the administrative decision that is based on that data. The opacity of this process is problematic since public bodies typically do not disclose the legal standards that govern these processes or the ways in which algorithmic decision-making processes work.[7] This creates a loss of accountability of decision-making procedures within the administration. Second, algorithmically informed decision-making procedures pose special risks to the privacy of citizens due to heightened surveillance, and may entrench discrimination flowing from the social sorting of citizens into categories and stereotypes.[8]

The administration is not the only branch of government that has changed due to rise of new technologies, the judiciary is also undergoing changes.[9] Judiciaries across the world (e.g. France,[10] the Netherlands,[11] Norway,[12] and China[13]) are in the midst of reforming and digitizing parts of their traditionally paper-based judicial procedures. . This digitalization of judicial proceedings has profoundly changed the way in which litigating parties interact with courts: litigating parties can file petitions online, communicate electronically with courts, submit procedural documents online, make complaints, and exchange evidence digitally.[14] The Dutch legislator, for example, has implemented the 'Quality and innovation in the Legal System' program (KEI) nationwide in order to modernize the way in which courts handle cases. Litigating parties can initiate proceedings online and communicate with the court

[6] Robert Brauneis and Ellen Goodman, 'Algorithmic Transparency for the Smart City', (2018) 20 The Yale Journal of Law and Technology 103, Johann Höchtl, Peter Parycek, and Ralph Schölhammer, 'Big Data in the Policy Cycle: Policy Decision Making in the Digital Era' (2015) 26(1) Journal of Organizational Computing and Electronic Commerce 147.
[7] Sandra Wachter and Brent Mittelstadt, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law p. 76-99, Cary Coglianese and David Lehr, 'Regulating by Robot: Administrative Decision Making in the Machine-Learning Era' (2017) 105 Georgetown Law Journal 1147, Jenna Burrell, 'How the Machine Thinks: Understanding Opacity in Machine Learning Algorithms' (2016) 3 Big Data and Society 1.
[8] Balasz Bodo et.al., 'Tackling the Algorithmic Control Crises – the Technical, Legal and Ethical Challenges of Research into Algorithmic Agents' (2017) 19 The Yale Journal of Law & Technology 135, The Netherlands Scientific Council for Governmental Policy, *Exploring the Boundaries of Big Data,* Amsterdam University Press 2016, p. 143.
[9] Mila Gasco-Hernandez and Carlos Jimenez-Gomez, 'Achieving Open Justice Through Citizen Participation and Transparancy' (2017) IGI Global, OECD, 'Open Government. The global context and the way forward' (2016), p. 235-237.
[10] http://www.justice.gouv.fr/la-garde-des-sceaux-10016/restitution-des-chantiers-de-la-justice-31181.html.
[11] Martijn Kroeze, 'Programma KEI: het begin van een paradigmawisseling' (2016) 2 RM Themis 53, The Netherlands Scientific Council for Governmental Policy, *Exploring the Boundaries of Big Data,* Amsterdam University Press 2016.
[12] Halvard Haukeland Fredriksen and Magne Strandberg, 'Is E-Justice Reform of Norwegian Civil Procedure Finally Happening?' (2016) 2 Oslo Law Review 72.
[13] Alison Xu, 'Chinese judicial justice on the cloud: a future call or a Pandora's box? An analysis of the 'intelligent court system' of China' (2017) 26 Information & Communication Technology Law 59,
[14] See for example, China's e-court model. Alison Xu, 'Chinese judicial justice on the cloud: a future call or a Pandora's box? An analysis of the 'intelligent court system' of China' (2017) 26 Information & Communication Technology Law 59, Benjamin Liebman et.al., 'Mass Digitization of Chinese Court Decisions: How to Use Text in the Field of Chinese Law' (2017) Columbia Public Law Research Paper 551.

registry and other parties involved in litigation digitally via a web portal called ‘’Mijn Zaak’’ (My Case), which is provided by the Dutch judiciary and can send requests and submit procedural documents electronically. This allows parties to track each step within administrative proceedings digitally, enhancing the transparency of administrative procedures in the courts.[15] In the Netherlands, digital litigation is already mandatory in Asylum Law and Detention cases.[16] Comparable developments are also occurring in China and in the United States. The Chinese government has implemented ‘’intelligent court system’’ back in 2014, this intelligent court aims ‘’to make full use of technologies such as internet, cloud computing, big data artificial intelligence and so on, to promote the modernization of trial system and judgment capability, so as to achieve the highly intellectualized operation and management of the people’s court’.[17]

The past years, Chinese courts have already uploaded twenty-nine million judicial documents and decisions to a centralized digital database of the Chinese Supreme People’s Court.[18] This digitalisation of judicial proceedings, combined with the rise of Open Governmental Data- and Open Justice Data initiatives across the globe, has also increased the amount of judicial data.[19] Once anonymized, these resources can be used to transform scattered pieces of data into valuable knowledge on judicial service delivery and judicial behaviour.[20] For example, sophisticated algorithms and its machine learning capabilities, have the computational ability to analyse large quantities of judicial data, can predict the outcome, change of success, and failure of judicial proceedings, develop a data-based portrait of judicial review patterns, predict how long it takes for judges to make rulings and how often their rulings are overturned in appeal. Predictive AI-driven techniques are already being used by legal practitioners and data scientists. Artificial Intelligence models, for example, have been able to predict decisions of the European Court of Human Rights with seventy-nine percent accuracy in cases related

[15] Frans van Dijk, ‘Improved Performance of the Netherlands Judiciary: Assessment of the Gains for Society’ (2014) 6 International Journal for Court Administration p. 1, Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59.

[16] In fact, 18.000 cases related to Asylum law have already been brought to the Dutch Council of State. See Bart-Jan van Ettekoven, ‘Behoorlijke bestuursrechtspraak in Big Data Tijdperk’ p. 233, in Barbara Beijen and Anette Bos (eds.), *In het nu. Over toekomstig bestuursrecht,* (Deventer: Kluwer 2018).

[17] Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59,

[18] Jonathan Lippman, ‘Towards a Unified Court System: A Comparison Between New York State Courts an Chinese Courts’, (2015) 8 Tsinghua China Law Review, Alison Xu, ‘Chinese judicial justice on the cloud: a future call or a Pandora’s box? An analysis of the ‘intelligent court system’ of China’ (2017) 26 Information & Communication Technology Law 59, Benjamin Liebman et.al., ‘Mass Digitization of Chinese Court Decisions: How to Use Text in the Field of Chinese Law’ (2017) Columbia Public Law Research Paper 551.

[19] OECD, ‘Rebooting Public Service Delivery: How Can Open Government Data Help to Drive Innovation?’ (2016) OECD Comparative Study, Carlos Jiménez-Gómez and Mila Gascó-Hernández, ‘Achieving Open Justice Through Citizen Participation and Transparency’ (2017).

[20] Daniel Katz, ‘Quantitative Legal Prediction – Or – How I Learned to Stop Worrying And Stard Preparing for the Data-Driven Future of the Legal Service Delivery’ (2013) 62 Emory Law Journal, 909, Davide Carneiro et.al., ‘Online Dispute Resolution: An Artificial Intelligence Perspective’, (2014) 41 Artificial Intelligence Review 211, Brian Simpson, ‘Algorithms or Advocacy: Does the Legal profession have a Future in the Digital World?’ (2016) 25 Information & Communication Technology Law 1, Daniel Katz e.a., ‘A general approach for predicting the behavior of the Supreme Court of the United States’, *Public Library of Science* (PLOS, www.plos.org)

to possible violations of articles 3, 6, and 8 of the European Convention of Human Rights.[21] In the United States, machine learning models have successfully predicted the voting behaviour and case outcome of the United States Supreme Court.[22] The French government, for example, has made nearly 350.000 judicial decisions available as part of its open data-policy. It has also implemented has artificial intelligence models that can analyse this data and transform it into valuable information on judicial activities.[23]

**2. Approach**

The Société de Législation Comparée (SLC) and Leiden University (LU) will conduct a thorough legal research on current digitalization developments in administrative law in fifteen selected countries. The aim of this research project is to, first, identify developments in digitalization and administrative law and second, to compare the developments and legal frameworks of fifteen selected countries. Our project asks respondents n fifteen countries across the world to fill in a questionnaire of **23 questions**. The questionnaire is divided into four subtopics that represent four chronological phases in which the rise of new technologies influence a process in which an administrative decision is rendered and contested at an administrative court:

(i) public bodies and the digitalisation of administrative decision-making processes;
(ii) digitalization of judicial proceedings and administrative proceedings;
(iii) judicial review of algorithmic and data driven decision-making processes, and
(iv) treatment of judicial data.

# QUESTIONS

## i. Subtopic 1: Public bodies and the digitalisation of administrative decision-making processes

Public bodies across the world use computer algorithms to conduct public affairs, develop administrative decision-making frameworks, prioritize regulatory activities, and deploy public resources.[24] Algorithmically determined decision-making is made possible due to the rise of new information technologies, such as Big Data analytics and AI, which enable the collection, analysis, and exchange of large amounts of data in the public sector. Algorithms, in this sense, can be used as an instrument in administrative decision-making processes. Thus, algorithmically determined profiles can be made for administrative purposes, such as the

[21] Nikolaos Aletras et al, "Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective'(2016) 2 Computer Science 1.
[22] Daniel Katz e.a., 'A general approach for predicting the behavior of the Supreme Court of the United States', *Public Library of Science* (PLOS, www.plos.org). See also Blakeley B McShane et al, 'Predicting Securities Fraud Settlements and Amounts: A Hierarchical Bayesian Model of Federal Securities Class Action Lawsuits' (2012) 9 Journal of Empirical Legal Studies 482 which predicts settlement outcomes of securities fraud class action law suits.
[23] Supra Legem Recherche analyse et intelligence juridique, www.supralegem.fr and https://www.data.gouv.fr/fr/reuses/supra-legem/.
[24] Robert Brauneis and Ellen Goodman, 'Algorithmic Transparency for the Smart City' (2018) 20 Yale Journal for Law and Technology 103,

levying of taxes, granting building permits, and granting social welfare benefits without further investigation.[25] The following question relates to algorithmically determined administrative decision-making procedures.

1. Do administrative bodies in your country make use of algorithmically determined decision-making processes?[26]
    a. If yes, please elaborate on the specific field in which this algorithmically determined decision-making typically occurs.
    b. If yes, please provide examples derived from administrative practice and/or case law.
    c. Please elaborate on what kind of laws, regulations, or (legal) principles govern algorithmic decision-making processes (such as state law, local law, national law, European law, soft law)?

The rise of new information technologies has also made predictive profiling possible as a governmental instrument of control and regulation in the public sector. Public bodies can use predictive profiling to, for example, identify and present tax and social welfare fraud. A Dutch example is the SyRI (System Risk Indication) instrument. The SyRI system is legitimized by the *Wet structuur uitvoeringsorganisatie werk en inkomen,* and aims to identify and combat fraud and the abuse of public resources. Public bodies in the social domain pool their data resources and screen citizens using risk models. A broad range of data can be used for these risk models, varying from data on taxes, social security, property registers, and debt registers. Public bodies receive a risk notification after the analysis has been made. This data is then stored into an administrative register so that public bodies can take further action on the basis of this data. The following question relates to predictive profiling in the public sector.

2. Do administrative bodies in your country make use of administrative decisions based on predictive profiling in the public sector?[27]
    a. If yes, please elaborate on the specific field in which the predictive profiling typically occurs.
    b. If yes, please provide examples derived from administrative practice and/or case law.

[25] Sofia Ranchordás, 'Cities as Corporations? The Privatization of Cities and the Automation of Law Law' (2018) Oxford Business Law Blog, https://www.law.ox.ac.uk/business-law-blog/blog/2018/04/law-and-autonomous-systems-series-cities-corporations-privatization Accessed at 19th April 2018.
[26] Algorithmic decision-making procedures or algorithmically-determined decision-making refers to the use of technologies such as AI, big data analytics and machine learning, to grant administrative decisions such as granting building/environment permits, social welfare benefits.
[27] Administrative decisions based on predictive profiling refers to the broad use of big data analytics and to collect and process data that the public body indirectly uses to decide upon an administrative decision, such as algorithmic trained in finding patterns in large data sets that is used to identify high risk-cases of tax- and social-welfare fraud tax- and social-welfare fraud,

c. Please elaborate on what kind of laws, regulations, or (legal) principles govern predictive profiling processes (such as state law, local law, national law, European law, soft law)?

3. Does this subtopic generate public debate in your country apart from legal scholarship discourse? If so, can you provide examples?

### ii. Subtopic 2: Digitalization of judicial and administrative proceedings

Governments across the world are setting up programs and are adopting new legislation with the aim of digitizing, improving, and modernizing judicial procedures. These initiatives entirely/partly replace existing paper-based procedures. The following questions relate to the digitalisation of judicial proceedings.

4. Are digital forms of judicial proceedings used in your country?
    a. If yes, please provide a general outline of this digital procedure.
    b. Are digital proceedings mandatory or optional in your legal system? Do they fully substitute paper-based judicial procedures?
    c. Are digital judicial proceedings possible:
        i. in all court cases (civil law, criminal law, administrative law), or only in certain fields of law?
        ii. in all stages of the procedure (first instance, appeal, cassation)?

5. Is the possibility or obligation to litigate through a digital procedure codified in law? If yes, please elaborate on this.
    a. What where the reasons for codification?
    b. When was it codified?
    c. How is the code structured?
    d. Was there a strong debate about this codification?

6. How are the identities of litigating parties verified? Please elaborate on the requirements and/or procedures for the authentication of the identification of litigating parties?
    a. If yes, which digital authentication method, such as digital signature method, is used to authenticate the identity of litigating parties?

7. Is the digital submission of procedural documents subject to digital authentication regulated?
    a. If yes, which digital authentication method, such as digital signature method, is used to authenticate the submission of procedural documents and exchange (them?) amongst litigating parties?

8. Is it obligatory or optional to digitally submit procedural documents, such as pleadings or defenses, in judicial proceedings?
    a. Which parties (e.g. lawyers, representatives, experts) are *obliged* to digitally submit documents in judicial proceedings? Is this codified by law?
    b. Which parties *are not obliged* to digitally submit documents in judicial proceedings? Is this codified by law? Who decides on these exemptions (judge, legislature)?
    c. What are the legal and factual consequences when parties do not submit procedural documents digitally when required? Can they, for example, redress this omission?

9. Regarding classified documents:
    a. How is the access of parties to the digitally submitted classified documents regulated?
    b. How is a safe submittal of classified documents guaranteed?
    c. Is this codified in law? If yes, please elaborate on this.

10. How does the digital submitting of documents change the role of the judge? For example:
    a. Does the digital submission of procedural documents speed up the duration of the judicial procedure ?
    b. Does the digital submission of procedural documents increase the possibility of a final settlement of a conflict?
    c. Does the digital submission of procedural documents mean that there is less need for an oral court session?
    d. Does the digital submission of procedural documents also increase the amount of digital evidence, such as emails, websites, digital recordings, videos, and other data?

11. Does your domestic law make a distinction between administrative proceedings within the administration and judicial proceedings? If yes:
    a. Are the abovementioned questions also applicable on digital forms of administrative proceedings used in your country? If yes, can you elaborate on this?
    b. Is this codified in law? If yes, please elaborate on this.

12. Does an administrative body coordinate, supervise, or regulate the use of digital proceedings by public bodies, including courts?
    a. Is this codified in law? If yes, please elaborate on this.

13. Does subtopic two generate public debate in your country apart from legal scholarship discourse,? If so, can you provide examples?

### iii. Subtopic 3: Judicial review of algorithmic and data driven decision-making processes

Judicial review typically obliges judges to scrutinize whether governmental actions, decision-making, or policy-making comply with the law. The datafication of administrative decision-making processes has created tremendous problems with regards to the accountability and judicial review of such programs, since judicial review executed by administrative courts was initially developed to scrutinize human rather than digital decision-makers. For their part, data-driven decision making processes are often harder to since the opacity and complexity of AI and data-driven decisions shield them from scrutiny. Hence, meaningful judicial review could be jeopardized[28], as was the case in the recent PAS-judgment of the Dutch Council of State.[29] The question, therefore, remains whether judges are sufficiently capable to scrutinize decision made by computer software (e.g. big data analytics and algorithms)? Does the judiciary need new methods adapted to new technologies in order to oversee whether automated decisions comply with the rule of law? The following questions relate to the judicial review of algorithmic- and data-driven decision making procedures.

14. What are typically (i) the burden of proof, (ii) rules and norms on the admissibility of evidence, (iii) and evidentiary standards for public bodies and litigating parties in such cases in order to prevail on their claim?
    a. Are (i) the burden of proof, (ii) rules and norms on the admissibility of evidence, and (iii) evidentiary standards different in cases related to the judicial review of algorithmic profiling and algorithmic decision-making processes, or does the general standard of proof apply? If yes, please provide examples derived from case law.

15. How does the (administrative) judge review algorithmic decision-making processes or profiling cases?
    a. Does the (administrative) judge review profiling cases or algorithmically determined administrative decisions fully or marginally (e.g. applying the standard of unreasonableness or a manifest of error)? Please elaborate on the scope and intensity of judicial review of profiling cases and algorithmically determined administrative decisions.
        i. Please provide examples derived from case law if possible.
    b. What is the role of general principles of good/sound administration in these disputes? Does the (administrative) judge take general principles of good/sound administration such as the right to be heard or principles of reason-

[28] B. Bodo e.a., 'Tackling the Algorithmic Control Crises – the Technical, Legal, and Ethical Challenges of Research into Algorithmic Agents', *Law Journal for Law and Technology,* vol.19, 2017. See also: J.A. Kroll e.a., 'Accountable Algorithms', *University of Pennsylvania Law Review* 2016, vol 165.
[29] ABRvS 17 May 2017, ECLI:NL:RVS:2017:1259. See also: M. Mekki, 'If code is law, then code is justice. Droits et algorithms', *Gazette du Palais* no..24, p. 10 (2017).

giving and transparency into account in algorithmic decision-making processes or profiling cases? How does the (administrative) judge scrutinize (these cases? You need a lijdend voorwerp)?

i. Please provide examples derived from case law if possible.

b. Has the judicial review of algorithmic decision-making processes or profiling cases led to the development of new legal principles, such as the principle of accountability, the right of explicability, or other rules and principles concerning administrative transparency, and access to (public) data?

i. If yes, please elaborate on this.

16. Evidence concerning complex issues of science and technology plays an increasingly important role in scrutinizing algorithmic decision-making processes and profiling cases. Appointing an expert referee is often suggested as a means for judges to deal with such issues. Can judges ask experts or advisory boards questions relating to the usage of data-driven of algorithmic decisions during judicial administrative proceedings?

a) If yes, on the basis of which method do courts appoint these expert referees? Can judges, for example, appoint expert referees themselves or are expert referees pre-selected by the court?

b) Can you provide examples derived from case law that illustrate how expert referees scrutinize algorithmic decision-making processes and profiling cases?

17. Are cases on the judicial review of algorithmic decision-making processes or profiling cases a trend or an outlier in case law of your country?

a. Please provide examples derived from case law.

18. Does subtopic three generate public debate in your country apart from legal scholarship discourse,? If so, can you provide examples?

### iv. Subtopic 4: Treatment of (open) judicial data

While in the recent year Open Government Data (OGD) policies have strongly increased, judiciaries have remained relatively reluctant in embracing open data policies, generally due to the conservative tradition of the legal profession.[30] However, this has changed drastically over the past decade. Around the world, several initiatives were launched to adopt open judicial data policies. For example, countries such as France and Spain have already established open data for judicial decisions policies. The benefits attributed to open judicial data are many: open judicial data policies will enhance the integrity and performance of people involved in the administration of the judiciary, improve the accountability of the

[30] OECD, 'Rebooting Public Service Delivery: How Can Open Government Data Help to Drive Innovation?' (2016) OECD Comparative Study, Carlos Jiménez-Gómez and Mila Gascó-Hernández, 'Achieving Open Justice Through Citizen Participation and Transparency' (2017).

judiciary, promote citizens' trust in the judiciary, and enhance justice service delivery. The following questions relate to the treatment of (open) judicial data.

19. Are there open judicial data initiatives promoting access to open judicial data in your country? If yes, could you provide a brief overview of these initiatives and what they entail?
    a. Does the judiciary in your legal system have a systematic judicial policy or specific regulation (such as general data protection laws or a general law on access to public information) that governs access to judicial data?

20. What kind of data does the judiciary in your legal system publish?

    a. Does the judiciary publish all court rulings from all government bodies (e.g. district courts, courts of appeals, supreme courts)? By court rulings, we refer to judicial decisions of courts that bring cases to an end.
    b. Does the judiciary publish quantitative data that provides an overview of judicial performance, such as caseload, solved caseload, average duration judicial procedure, and the amount of annulments per court/per judge?
    c. Does the judiciary publish other type of data that you find relevant to mention?
    d. How do judiciaries deal with this data? Do they analyse this data in order to find, for example, patterns in case law, or how certain judges rule in certain type of cases?

21. Do the following **governmental institutions** in your country make use of algorithms that can analyze judicial data in order to translate this into information and patterns in case law, how certain judges rule in certain type of cases, or for other purposes?
    a. The legislator
        i. If yes, please elaborate by providing examples.
    b. The judiciary
        i. If yes, please elaborate by providing examples.
    c. Administrative legislative advisory bodies
        i. If yes, please elaborate by providing examples.

22. Do **private parties such as law firms or corporations** analyze legal data in order to translate this into information and patterns in case law, how certain judges rule in certain type of cases, or for other purposes?
    a. If yes, please elaborate on examples.

23. Does subtopic four generate public debate in your country apart from legal scholarship discourse,? If so, can you provide examples?